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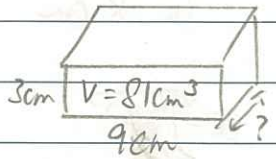
My Pals 6B Chapter 11

Let's Practise! 11a (p.107 - p.109) ⇒ Suggested answer.
(Q1a, 2a, 3a, 4, 5, 6, 7)

1a)



Volume = length × width × height

$V = LWH$

$\therefore ? = W$

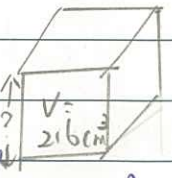
$\therefore ? = \frac{V}{L \cdot H}$

$= \frac{81\,cm^3}{9cm \times 3cm}$

$= 3cm$

The unknown edge is 3cm

2a) Since solid is a cube, all sides are the same



$? \times ? \times ? = 216\,cm^3$

$? = \sqrt[3]{216}$

$? = \sqrt[3]{2^3 \times 3^3}$

$? = \sqrt[3]{(2 \times 3)^3}$

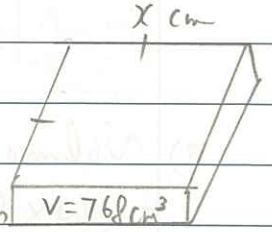
$? = 2 \times 3$

$? = 6$

∴ The unknown edge is 6cm

2 ←	2 | 216
	2 | 108
	3 | 54
×	3 | 27
3 ←	3 | 9
	3

3a) Let x cm be the length of one side of the square face.



$V = x \times x \times 3$

$x^2 = \frac{768}{3}$

$x = \sqrt{256}$

$x = \sqrt{2^8}$

$x = \sqrt{(2^4)^2}$

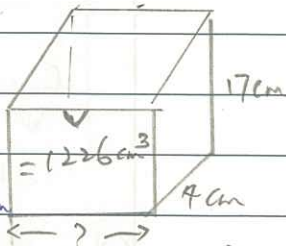
$x = 2^4$

$x = 16$

2 ←	2 | 256
	2 | 128
×	2 | 64
2 ←	2 | 32
×	2 | 16
2 ←	2 | 8
×	2 | 4
2 ←	2 | 2
	1

4.

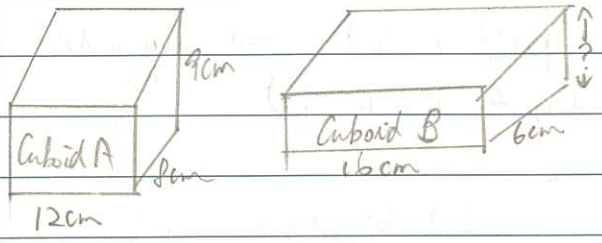
The length of the container:



$1226\,cm^3 \div 4cm \div 17cm$

$= 18$ cm (correct to nearest cm)

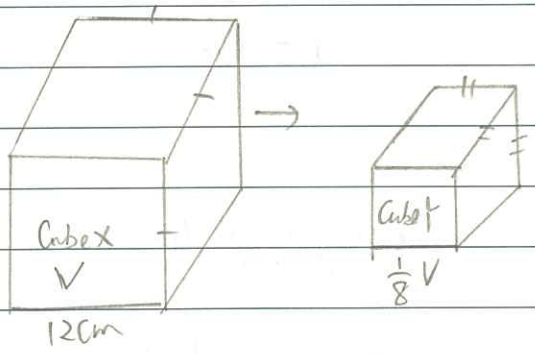
5.



a) Volume of cuboid A
$= (12 \times 8 \times 9)\ cm^3$
$= 864\ cm^3$

b) Since the volume of cuboid B is the same as A, i.e $864\ cm^3$,
The height of cuboid B:
$(864 \div 16\ cm \div 6)\ cm$
$= 9\ cm$

6.



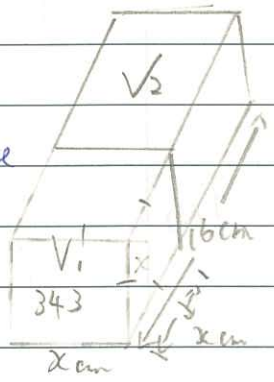
The volume of Cube X
$= 12 \times 12 \times 12\ cm^3$
$= 1728\ cm^3$

Length of cube Y:
$\sqrt[3]{(1728) \times \frac{1}{8}}$

$= \sqrt[3]{216}$
$= 6\ cm$

2 | 216
2 | 108
2 | 54
3 | 27
3 | 9
3 | 3
1

7.
Let the length of the cut out cube be x cm



$x = \sqrt[3]{343}$
$x = 7$

7 | 343
7 | 49
7

∴ The length of the cuboid is $(16 - 7) = 9\ cm$
The square face is $7\ cm \times 7\ cm$

The Volume of the remaining block
$= (7 \times 7 \times 9)\ cm^3$
$= 441\ cm^3$